PATENT
Attorney Docket No. 209897

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Lazarus et al.

Application No. 09/814,558

Art Unit: 1653

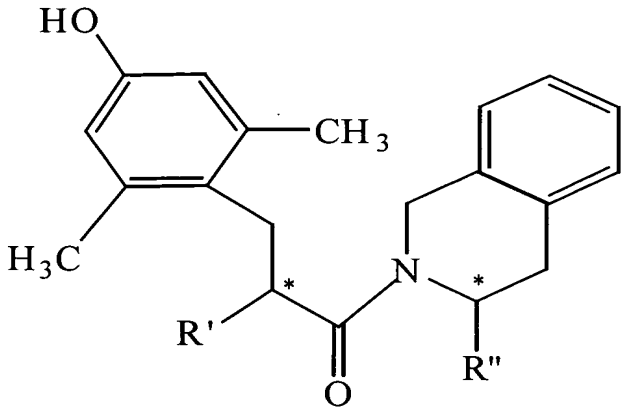
Examiner: D. Lukton

Filed: March 22, 2001

For: DMT-TIC DI-AND TRI-PEPTIDIC DERIVATIVES AND RELATED COMPOSITIONS AND METHODS OF USE

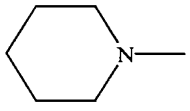
PENDING CLAIMS AFTER AMENDMENTS MADE IN RESPONSE TO OFFICE ACTION DATED SEPTEMBER 28, 2001

1. A compound of formula:



wherein R' is selected from the group consisting of

H_2NH_2C-,



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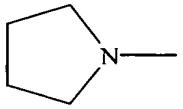

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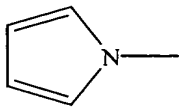
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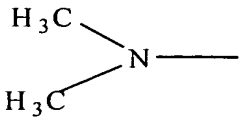
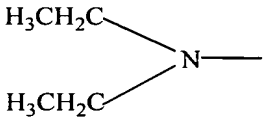

, and

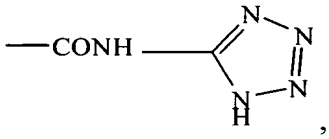

and

R" is selected from the group consisting of

——CH_2COOH,

——COOH,

——$CONHNH_2$,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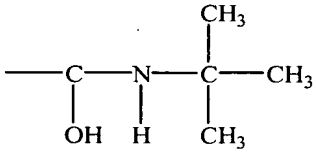
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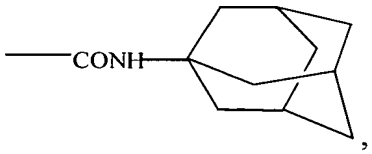
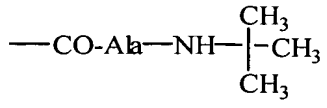
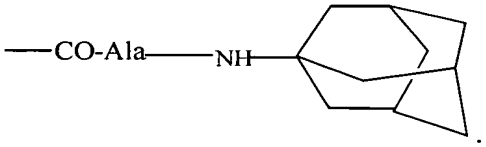

,

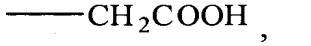
——CO-Ala—$NHCH_3$,



and



2. The compound of claim 19, wherein R' is H_2N—— and R" is selected from the group consisting of



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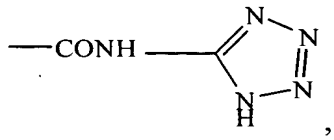

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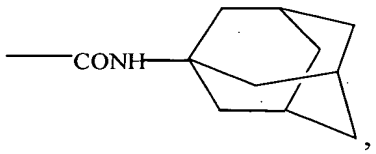

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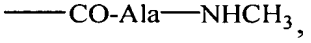

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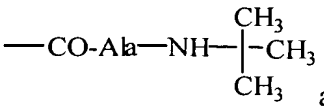
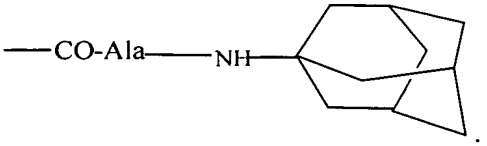
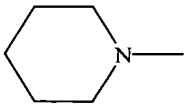


and



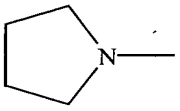
3. The compound of claim 1, wherein R' is H_2NH_2C- and R" is ——COOH.

4. The compound of claim 1, wherein R' is



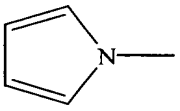
and R" is ——COOH.

5. The compound of claim 1, wherein R' is



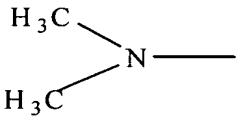
and R" is ——COOH.

6. The compound of claim 1, wherein R' is

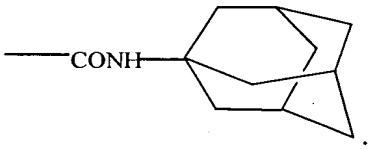


and R" is ——COOH.

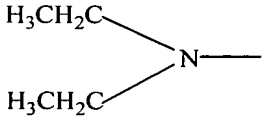
7. The compound of claim 1, wherein R' is



and R" is



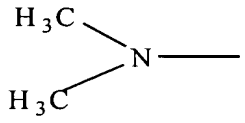
8. The compound of claim 1, wherein R' is



and

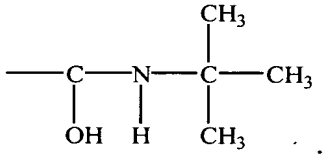
R" is ——COOH.

9. The compound of claim 1, wherein R' is



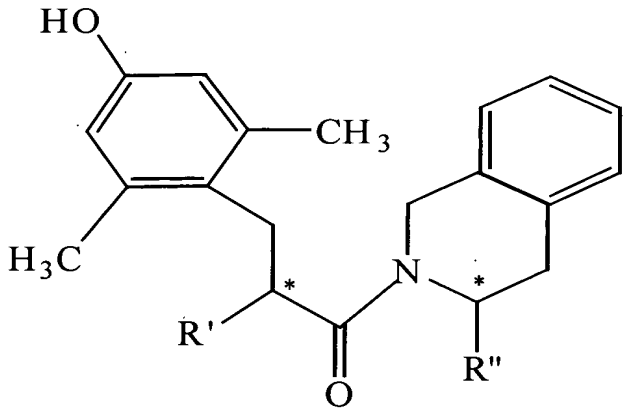
and

R" is

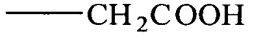


10. A composition comprising at least one compound of claim 1 and a carrier.

11. A method of treating a mammal in need of an antagonist of a δ-opioid receptor, which method comprises administering at least one compound of formula:

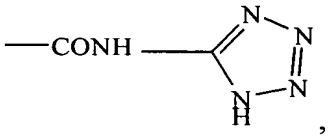


wherein (i) R' is and R" is



(ii) R' is and

R" is



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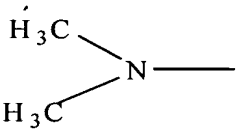
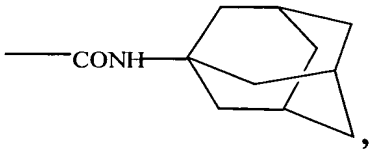


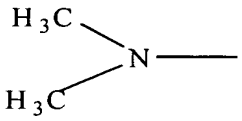
(iii) R' is and

R" is



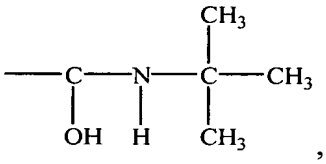
,

(iv) R' is



and

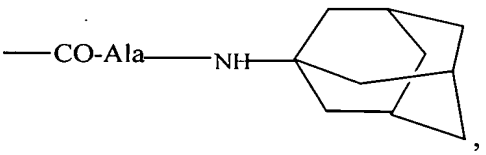
R" is



,

(v) R' is H_2N—— and

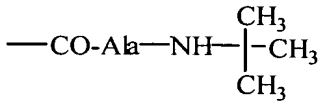
R" is



,

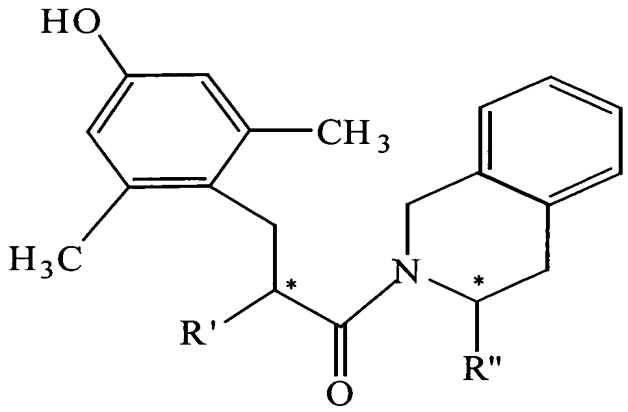
or (vi) R' is H_2N—— and

R" is

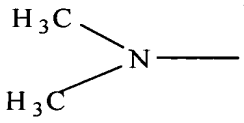


in an amount that antagonizes a δ-opioid receptor in said mammal.

12. The method of claim 11, wherein said mammal is also in need of an agonist of a μ-opioid receptor, in which case the compound of formula:

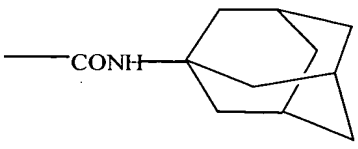


is the compound wherein R' is



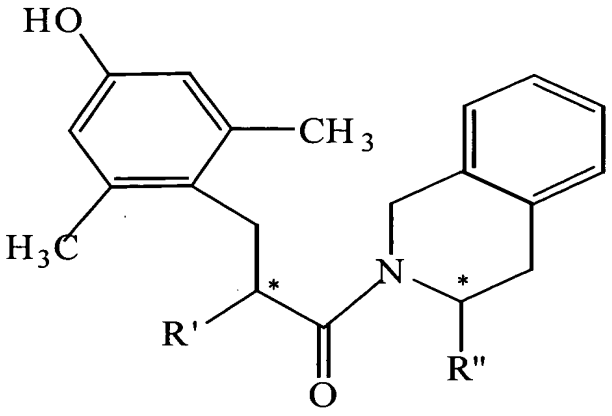
and

R" is



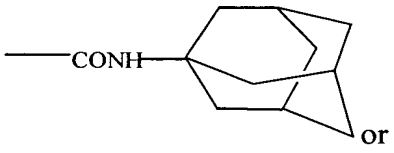
and the compound is administered in an amount that also agonizes a μ-opioid receptor in said mammal.

13. A method of treating a mammal in need of an agonist of a δ-opioid receptor, which method comprises administering at least one compound of formula:



wherein (i) R' is H_2N—— and

R" is

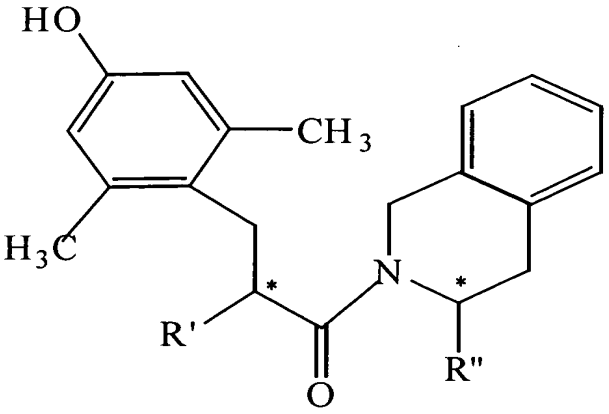


or

(ii) R' is H_2N—— and

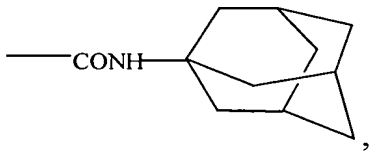
R" is ——CO-Ala—$NHCH_3$ in an amount that agonizes a δ-opioid receptor in said mammal.

14. A method of treating a mammal in need of an agonist of a μ-opioid receptor, which method comprises administering at least one compound of formula:

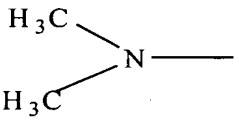


wherein (i) R' is H_2N— and

R" is

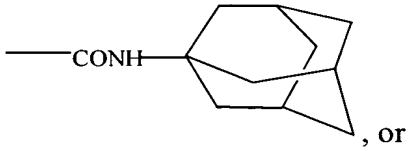


(ii) R' is



and

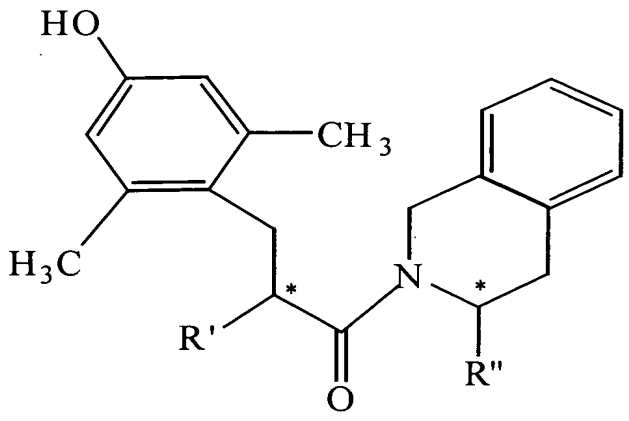
R" is



, or

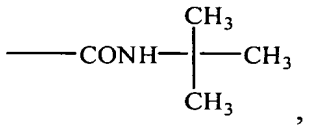
(iii) R' is H_2N— and R" is —CO-Ala—$NHCH_3$ in an amount that agonizes a μ-opioid receptor in said mammal.

15. A method of inhibiting the binding of an opioid receptor-binding compound with a P glycoprotein in a mammal, which method comprises administering at least one compound of formula:



wherein (i) R' is H_2N—— and

R" is

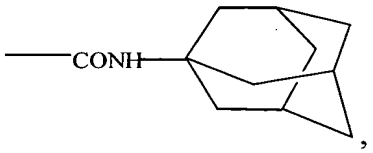


,

(ii) R' is

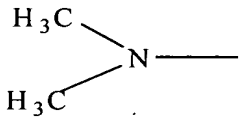
H_2N—— and

R" is



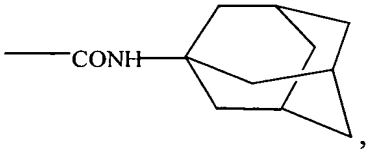
,

(iii) R' is



and

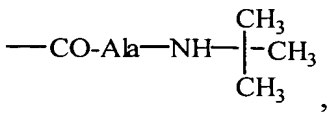
R" is



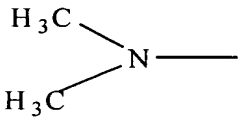
,

(iv) R' is H_2N—— and

R" is

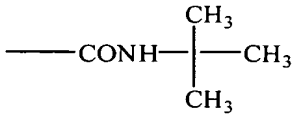


(v) R' is

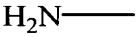


and

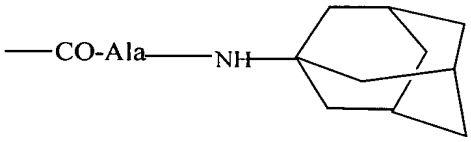
R" is



, or

(vi) R' is  and

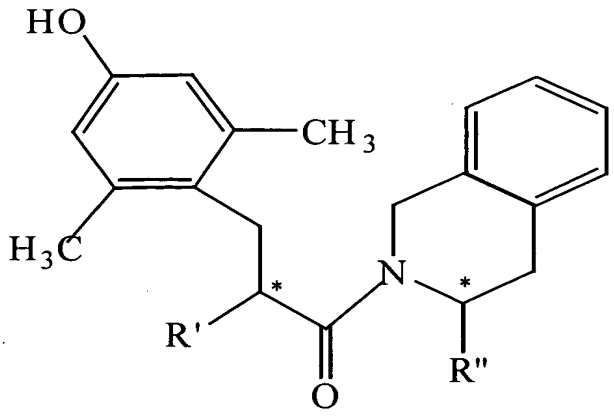
R" is



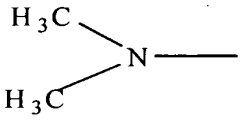
in an amount effect to inhibit the binding of an opioid receptor-binding compound with a P glycoprotein in a mammal.

16. The method of claim 15, wherein said P glycoprotein is P-gp1 (hMDR-1).

17. The method of claim 15, wherein said compound of formula:

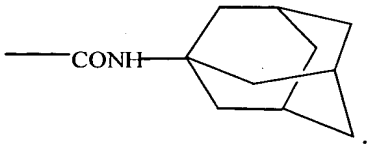


is the compound wherein R' is

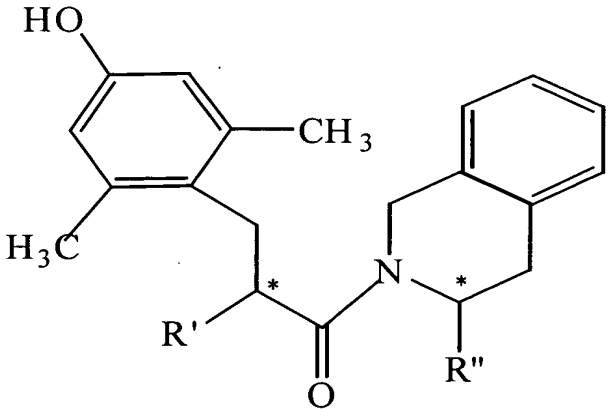


and

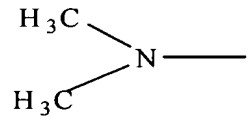
R" is



18. The method of claim 16, wherein said compound of formula:

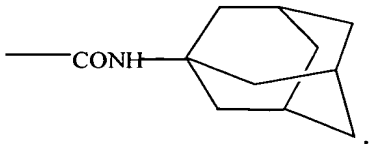


is the compound wherein R' is

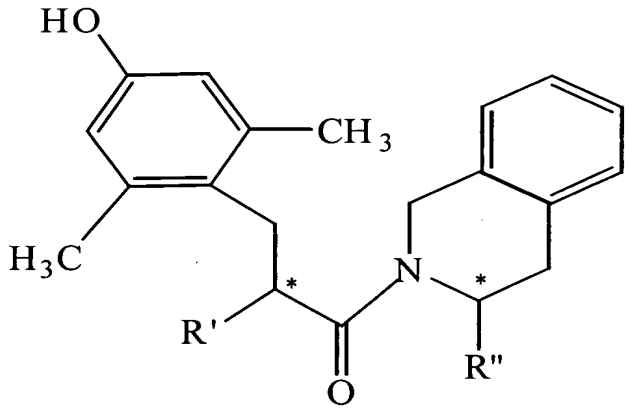


and

R" is



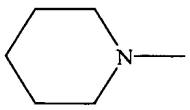
19. A compound of formula:

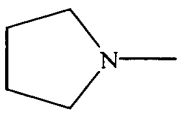


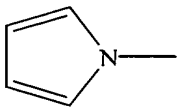
wherein R' is selected from the group consisting of

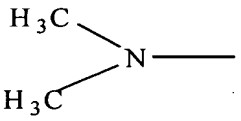
H_2N——,

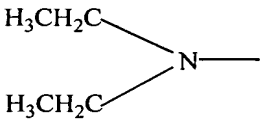
H_2NH_2C-,







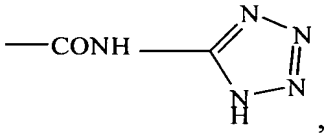

, and

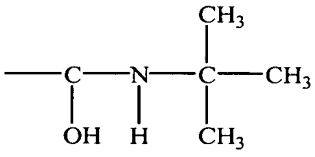

and

R" is selected from the group consisting of


,


,


,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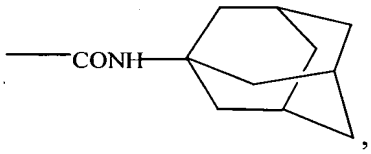
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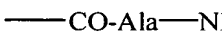
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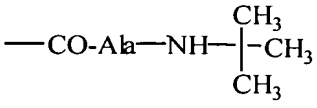
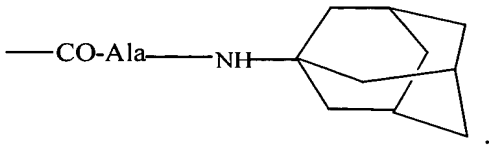

and



20. A composition comprising at least one compound of claim 19 and a carrier.